CLAIMS

The following is a detailed listing of all claims that are, or were, in the Application.

1.   (Canceled)

2.   (Previously presented) A digital control system for controlling a switch of a voltage converters, comprising:

a duty cycle generator that provides a duty cycle for the switch;

a digital counter that stores a plurality of entries, wherein each entry can be input to the duty cycle generator for modifying the duty cycle in response to a varying load;

a first comparator that compares an output voltage to a reference voltage; and

an algorithm generator producing an algorithm that determines the rate of change for modifying the duty cycle;

wherein if the first comparator detects that the output voltage is higher than the reference voltage, the algorithm generator affecting the input of entries from the digital counter into the duty cycle generator, thereby adjusting the rate of change for modifying the duty cycle of the switch.

3.   (Original) The system of claim 2 further comprising a second comparator having a reference different than the first comparator.

4-6.   (Canceled)

7.   (Previously presented) A method for producing a desired output voltage comprising:

storing in memory, an indication of a duty cycle needed for a varying load;

monitoring the load;

altering the duty cycle at a first frequency to produce the desired output voltage based upon the indication; and

if a change in the load is detected, changing the frequency of alteration of the duty cycle;

wherein if the load increases, the frequency of alteration is increased, thereby minimizing a dip in the output voltage.

8-14.   (Canceled)

15.   (Withdrawn) A method for bucking or boosting a voltage, comprising:

providing groups of pulses, each group comprising one or more pulses;

detecting the rate of change of an output voltage over time;

modifying the frequency of generation of the groups of pulses in response to said rate of change;

detecting the magnitude of the output voltage; and

changing a pulse width of the output voltage in response to the detected magnitude.

16.   (Canceled)

17.   (Previously presented) The method of claim 7 wherein monitoring the load comprises usage of two or more comparators.

18.   (Previously presented) The method of claim 17, wherein the two or more comparators each have a different reference.

19.   (Previously presented) A voltage converter for producing a desired output voltage, comprising:

a memory storing an indication of a duty cycle needed for a varying load;

a duty cycle generator that utilizes the indication for altering the duty cycle at a frequency to produce the desired output voltage;

monitor circuitry for monitoring the load, wherein the monitor circuitry causes a change in the frequency of altering the duty cycle;

wherein if the load increases, the frequency of altering is increased, thereby minimizing a dip in the output voltage.

20.   (Previously presented) The voltage converter of claim 19 wherein the monitor circuitry comprises two comparators.

21.   (Previously presented) The voltage converter of claim 20 wherein the two comparators each have a different reference.